

## Claims

- [1] 1. A preparation method for a solid titanium catalyst for olefin polymerization, which comprises the steps of: (1) preparing a magnesium compound solution by dissolving a magnesium halide compound into a mixed solvent of a cyclic ether and one or more of alcohol; (2) preparing a carrier by, adding a mixture of titanium compound having a general formula of  $\text{Ti(OR)}_a\text{X}_{(4-a)}$ , in which R is an alkyl group having 1-10 carbon atoms, X is a halogen atom and a is an integer of 0-4, and halogenated hydrocarbon, to the magnesium compound solution at -70-70 °C and then elevating the temperature for reaction; and (3) preparing a solid titanium catalyst by reacting the carrier with a titanium compound and an electron donor.
- [2] 2. The preparation method for a solid titanium catalyst for olefin polymerization according to claim 1, characterized in that the cyclic ether used in the step (1) is tetrahydrofuran or 2-methyltetrahydrofuran, and the one or more of alcohol used in the step (1) is primary or polyhydric alcohol having 2-12 carbon atoms.
- [3] 3. The preparation method for a solid titanium catalyst for olefin polymerization according to claim 1 or 2, characterized in that the molar ratio of the cyclic ether : the one or more of alcohol used in the step (1), is 1:0.1~1:10.
- [4] 4. The preparation method for a solid titanium catalyst for olefin polymerization according to claim 1, characterized in that the halogenated hydrocarbon used in the step (2) is a halogenated hydrocarbon having 1-20 carbon atoms containing at least one halogen.
- [5] 5. The preparation method for a solid titanium catalyst for olefin polymerization according to claim 1, characterized in that the molar ratio of the halogenated hydrocarbon : the titanium compound is 1:0.05-1: 0.95.